Shinco®

SERVICE MANUAL

MODEL
DVD-2610

CAUTION : Before servicing this chassis, read the "PRODUCT SAFETY SERVICE FOR VIDEO PRODUCTS" section on page 2 of this manual.

DVD and CD PLAYER

CONTENTS

PRODUCT SAFETY SERVICING GUIDELINES FOR VIDEO PRODUCTS

CAUTION: DO NOT ATTEMPT TO MODIFY THIS PRODUCT IN ANY WAY AND NEVER PERFORM CUSTOMIZED INSTALLATIONS WITHOUT MANUFACTURER'S APPROVAL. UNAUTHORIZED MODIFICATIONS WILL NOT ONLY VOID THE WARRANTY, BUT MAY LEAD TO YOUR BEING LIABLE FOR ANY RESULTING PROPERTY DAMAGE OR USER INJURY.

SERVICE WORK SHOULD BE PERFORMED ONLY AFTER YOU ARE THOROUGHLY FAMILIAR WITH ALL OF THE FOLLOWING SAFETY CHECKS AND SERVICING GUIDELINES. TO DO OTHERWISE, INCREASES THE RISK OF POTENTIAL HAZARDS AND INJURY TO THE USER.

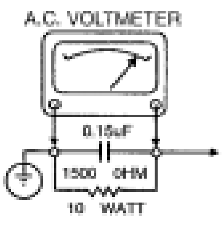
WHILE SERVICING, USE AN ISOLATION TRANSFORMER FOR PROTECTION FROM A.C. LINE SHOCK.

SAFETY CHECKS

AFTER THE ORIGINAL SERVICE PROBLEM HAS BEEN CORRECTED, A CHECK SHOULD BE MADE OF THE FOLLOWING.

SUBJECT: FIRE & SHOCK HAZARD

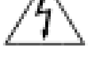
1. BE SURE THAT ALL COMPONENTS ARE POSITIONED IN SUCH A WAY AS TO AVOID POSSIBILITY OF ADJACENT COMPONENT SHORTS. THIS IS ESPECIALLY IMPORTANT ON THOSE MODULES WITCH ARE TRANSPORTED TO AND FROM THE REPAIR SHOP.
2. NEVER RELEASE A REPAIR UNLESS ALL PROTECTIVE DEVICES SUCH AS INSULATORS, BARRIERS, COVERS, SHIELDS, STRAIN RELIEFS, POWER SUPPLY CORDS, AND OTHER HARDWARE HAVE BEEN REINSTALLED PER ORIGINAL DESIGN. BE SURE THAT THE SAFETY PURPOSE OF THE POLARIZED LINE PLUG HAS NOT BEEN DEFEATED.
3. SOLDERING MUST BE INSPECTED TO DISCOVER POSSIBLE COLD SOLDER JOINTS, SOLDER SPLASHES OR SHARP SOLDER POINTS. BE CERTAIN TO REMOVE ALL LOOSE FOREIGN PARTICLES.
4. CHECK FOR PHYSICAL EVIDENCE DF DAMAGE OR DETERIORATION TO PARTS AND COMPONENTS, FOR FRAYED LEADS AND DAMAGED INSULATION (INCLUDING A.C. CORD), AND REPLACE IF NECESSARY FOLLOW ORIGINAL LAYOUT, LEAD LENGTH AND DRESS.
5. NO LEAD OR COMPONENT SHOULD TOUCH A RECEIVING TUBE OR A RESISTOR RATED AT 1 WATT OR MORE. LEAD TENSION AROUND PROTRUDING METAL SURFACES MUST BE AVOIDED.
6. ALL CRITICAL COMPONENTS SUCH AS FUSES. FLAMEPROOF RESISTORS, CAPACITORS, ETC. MUST BE REPLACED WITH EXACT FACTORY TYPES, DO NOT USE REPLACEMENT COMPONENTS OTHER THAN THOSE SPECIFIED OR MAKE UNRECOMMENDED CIRCUIT MODIFICATIONS.
7. AFTER RE-ASSEMBLY OF THE SET, ALWAYS PERFORM AN A.C. LEAKAGE TEST ON ALL EXPOSED METALLIC PARTS OF THE CABINET, (THE CHANNEL SELECTOR KNOB, ANTENNA TERMINALS. HANDLE AND SCREWS) TO BE SURE THE SET IS SAFE TO OPERATE WITHOUT DANGER OF ELECTRICAL SHOCK. DO NOT USE A LINE ISOLATION TRANSFORMER DURING THIS TEST, MAKE SURE TO USE AN A.C. VOLTMETER. HAVING 5000 OHMS PER VOLT OR MORE SENSITIVITY, IN THE FOLLOWING MANNER; CONNECT A 1500 OHMS 10 WATT RESISTOR, PARALLELED BY A.15 MFD. 150V A.C. TYPE CAPACITOR BETWEEN A KNOWN GOOD EARTH GROUND (WATER PIPE, CONDUIT, ETC.) AND THE EXPOSED METALLIC PARTS, ONE AT A TIME. MEASURE THE A.C. VOLTAGE ACROSS THE COMBINATION OF 1500 OHM RESISTOR AND 15 MFD CAPACITOR. REVERSE THE A.C. PLUG AND REPEAT A.C. ANY VOLTAGE MEASUREMENTS FOR EACH EXPOSED METALLIC PART. VOLTAGE MEASURED MUST NOT EXCEED 75 VOLTS R.M.S. THIS CORRESPONDS TO 0.5 MILLIAMP A.C. ANY VALUE EXCEEDING THIS LIMIT CONSTITUTES A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED IMMEDIATELY.



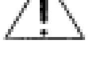
GOOD EARTH GROUND SUCH AS THE WATER PIPE, CONDUIT, ETC.

PLACE THIS PROBE ON EACH EXPOSED METAL PART

SUBJECT GRAPHIC SYMBOLS



THE LIGHTNING FLASH WITH APROWHEAD SYMBOL. WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.



THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION IN SERVICE LITERATURE.

SUBJECT: X-RADIATION

1. BE SURE PROCEDURES AND INSTRUCTIONS TO ALL SERVICE PERSONNEL COVER THE SUBJECT OF X-RADIATION. THE ONLY POTENTIAL SOURCE OF X-RAYS IN CURRENT T.V. RECEIVERS IS THE PICTURE TUBE. HOWEVER, THIS TUBE DOES NOT EMIT X-RYS WHEN THE HIGH VOLTAGE IS AT THE FACTORY SPECIFIED LEVEL. THE PROPER VALUE IS GIVEN IN THE APPLICABLE SCHEMATIC. OPERATION AT HIGHER VOLTAGES MAY CAUSE A FAILURE OF THE PICTURE TUBE OR HIGH VOLTAGE SUPPLY AND, UNDER CERTAIN CIRCUMSTANCES, MAY PRODUCE RADIATION IN EXCESS OF DESIRABLE LEVELS.
2. ONLY FACTORY SPECIFIED C.R.T ANODE CONNECTORS MUST BE USED. DEGAUSSING SHIELDS ALSO SERVE AS AN X-RAY SHIELD IN COLOR SETS, ALWAYS RE-INSTALL THEM.
3. IT IS ESSENTIAL THAT SERVICE PERSONNEL HAVE AVAILABLE AN ACCURATE AND RELIABLE HIGH VOLTAGE METER. THE CALIBRATION OF THE METER SHOULD BE CHECKED PERIODICALLY AGAINST A REFERENCE STANDARD, SUCH AS THE ONE AVAILABLE AT YOUR DISTRIBUTOR.
4. WHEN THE HIGH VOLTAGE CIRCUITRY IS OPERATING PROPERLY, THERE IS NO POSSIBILITY OF AN X-RADIATION PROBLEM. EVERY TIME A COLOR CHASSIS IS SERVICED, THE BRIGHTNESS SHOULD BE RUN UP AND DOWN WHILE MONITORING THE HIGH VOLTAGE WITH A METER TO BE CERTAIN THAT THE HIGH VOLTAGE DOES NOT EXCEED THE SPECIFIED VALUE AND THAT IT IS REGULATING CORRECTLY. WE SUGGEST THAT YOU AND YOUR SERVICE ORGANIZATION REVIEW TEST PROCEDURES SO THAT VOLTAGE REGULATION IS ALWAYS CHECKED AS A STANDARD SERVICING PROCEDURE AND THAT THE HIGH VOLTAGE READING BE RECORDED ON EACH CUSTOMER'S INVOICE.
5. WHEN TROUBLESHOOTING AND MAKING TEST MEASUREMENTS IN A PRODUCT WITH A PROBLEM OF EXCESSIVE HIGH VOLTAGE AVOID BEING UNNECESSARILY CLOSE TO THE PICTURE TUBE AND THE HIGH VOLTAGE SUPPLY DO NOT OPERATE THE PRODUCT LONGER THAN IT IS NECESSARY TO LOCATE THE CAUSE OF EXCESSIVE VOLTAGE.
6. REFER TO HV. B+ AND SHUTDOWN ADJUSTMENT PROCEDURES DESCRIBED IN THE APPROPRIATE SCHEMATIC AND DIAGRAMS(WHERE USED).

SUBJECT: IMPLOSION

1. ALL DIRECT VIEWED PICTURE TUBES ARE EQUIPPED WITH AN INTEGRAL IMPLOSION PROTECTION SYSTEM, BUT CARE SHOULD BE TAKEN TO AVOID DAMAGE DURING INSTALLATION, AVOID SCRATCHING THE TUBE. IF SCRATCHED REPLACE IT.
2. USE ONLY RECOMMENDED FACTORY REPLACEMENT TUBES.

SUBJECT: TIPS ON PROPER INSTALLATION

1. NEVER INSTALL ANY PRODUCT IN A CLOSED-IN RECESS. CUBBYHOLE OR CLOSELY FITTING SHELF SPACE, OVER OR CLOSE TO HEAT DUCT, OR IN THE PATH OF HEATED AIR FLOW.
2. AVOID CONDITIONS OF HIGH HUMIDITY SUCH AS: OUTDOOR PATIO INSTALLATIONS WHERE DEW IS A FACTOR, NEAR STEAM RADIATORS WHERE STEAM LEAKAGE IS A FACTOR, ETC.
3. AVOID PLACEMENT WHERE DRAPERIES MAY OBSTRUCT REAR VENTING. THE CUSTOMER SHOULD ALSO AVOID THE USE OF DECORATIVE SCARVES OR OTHER COVERINGS WHICH MIGHT OBSTRUCT VENTILATION.
4. WALL AND SHELF MOUNTED INSTALLATIONS USING A COMMERCIAL MOUNTING KIT, MUST FOLLOW THE FACTORY APPROVED MOUNTING INSTRUCTIONS. A PRODUCT MOUNTED TO A SHELF OR PLATFORM MUST RETAIN ITS ORIGINAL FEET (OR THE EQUIVALENT THICKNESS IN SPACERS) TO PROVIDE ADEQUATE AIR FLOW ACROSS THE BOTTOM. BOLTS OR SCREWS USED FOR FASTENERS MUST NOT TOUCH ANY PARTS OR WIRING. PERFORM LEAKAGE TEST ON CUSTOMIZED INSTALLATIONS.
5. CAUTION CUSTOMERS AGAINST THE MOUNTING OF A PRODUCT ON SLOPING SHELF OR A TILTED POSITION, UNLESS THE PRODUCT IS PROPERLY SECURED.
6. A PRODUCT ON A ROLL-ABOUT CART SHOULD BE STABLE ON ITS MOUNTING TO THE CART CAUTION THE CUSTOMER ON THE HAZARDS OF TRYING TO ROLL A CART WITH SMALL CASTERS ACROSS THRESHOLDS OR DEEP PILE CARPETS.
7. CAUTION CUSTOMERS AGAINST THE USE OF A CART OR STAND WHICH HAS NOT BEEN LISTED BY UNDERWRITERS LABORATORIES, INC. FOR USE WITH THEIR SPECIFIC MODEL OF TELEVISION RECEIVER OR GENERICALLY APPROVED FOR USE WITH TV'S OF THE SAME OR LARGER SCREEN SIZE.
8. CAUTION CUSTOMERS AGAINST THE USE OF EXTENSION CORDS. EXPLAIN THAT A FOREST OF EXTENSIONS SPROUTING FROM A SINGLE OUTLET CAN LEAD TO DISASTROUS CONSEQUENCES TO HOME AND FAMILY.

SERVICING PRECAUTIONS

CAUTION : Before servicing the DVD covered by this service data and its supplements and ADDENDUMS, read and follow the *SAFETY PRECAUTIONS NOTE* : if unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions in this publications, always follow the safety precautions.

Remember Safety First:

General Servicing Precautions

1. Always unplug the DVD AC power cord from the AC power source before:
   (1) Removing or reinstalling any component, circuit board, module, or any other assembly.
   (2) Disconnection or reconnecting any internal electrical plug or other electrical connection.
   (3) Connecting a test substitute in parallel with an electrolytic capacitor

   Caution : A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

2. Do not spray chemicals on or near this DVD or any of its assemblies.

3. Unless specified otherwise in this service data, clean electrical contacts by applying an appropriate contact cleaning solution to the contacts with a pipe cleaner, cotton-tipped swab, or comparable soft applicator.

   Unless specified otherwise in this service data, lubrication of contacts is not required.

4. Do not defeat any plug/socket B+ voltage interlocks with witch instruments covered by this service manual might be equipped.

5. Do not apply AC power to this DVD and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.

6. Always connect test instrument ground lead to the appropriate ground before connection the test instrument positive lead. Always remove the test instrument ground lead last.

Insulation Checking Procedure

Disconnect the attachment plug trom the AC outlet and turn the power on. Connect an insulation resistance meter(500V) to the blades of the attachment plug. The insulation resistance between each blade of the attachment plug and accessible conductive parts (Note 1) should be more than 1M ohm.

Note 1 : Accessible Conductive Parts including Metal panels, input terminals, Earphone jacks, etc.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field effect transistors and semiconductor chip components.

The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum toil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a GROUNDED-tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static solder removal device. Some solder removal devices not classified a "anti-static" can generate electrical charges sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charge sufficient to damage ES devices.

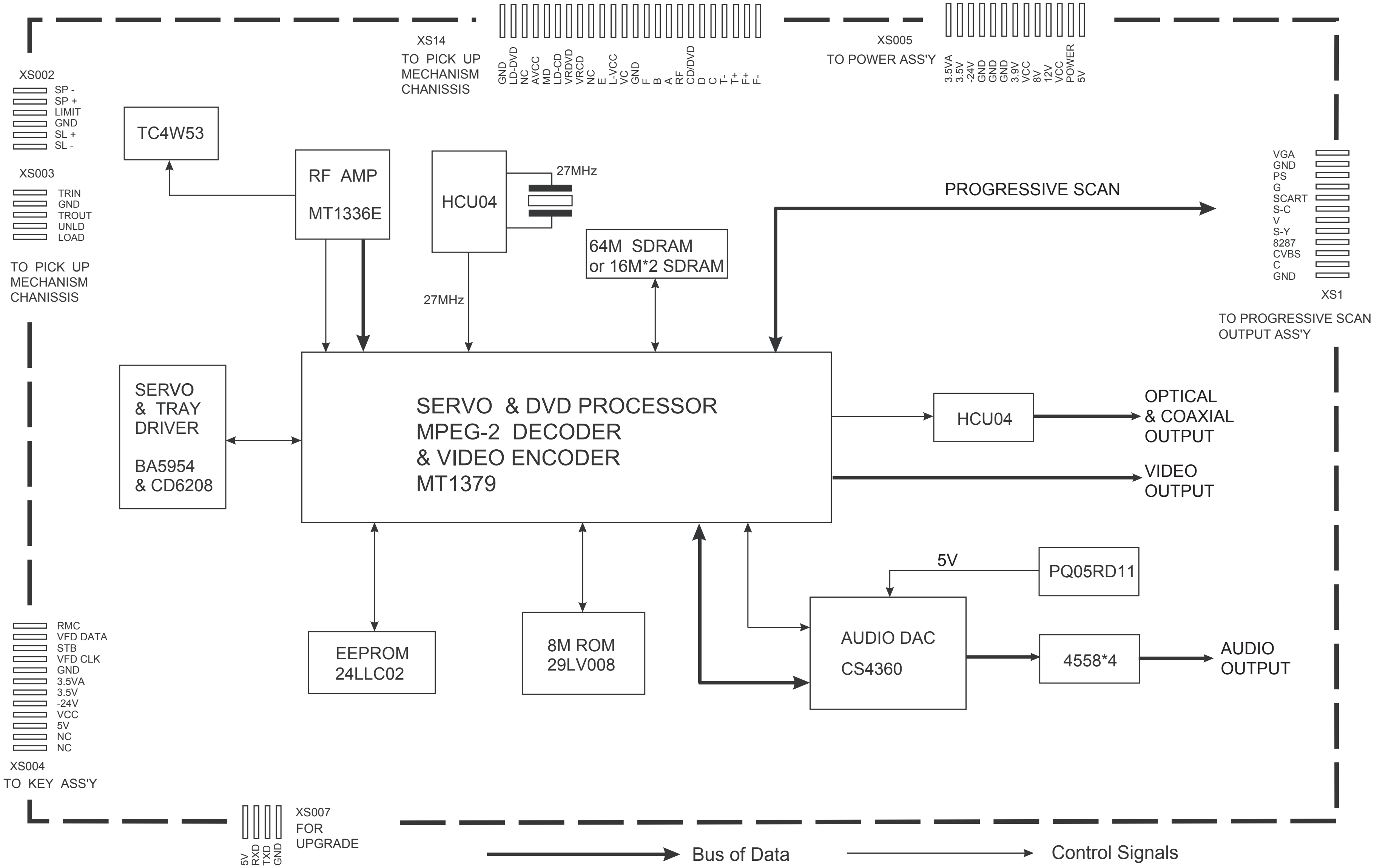
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil, or comparable conductive material.)

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

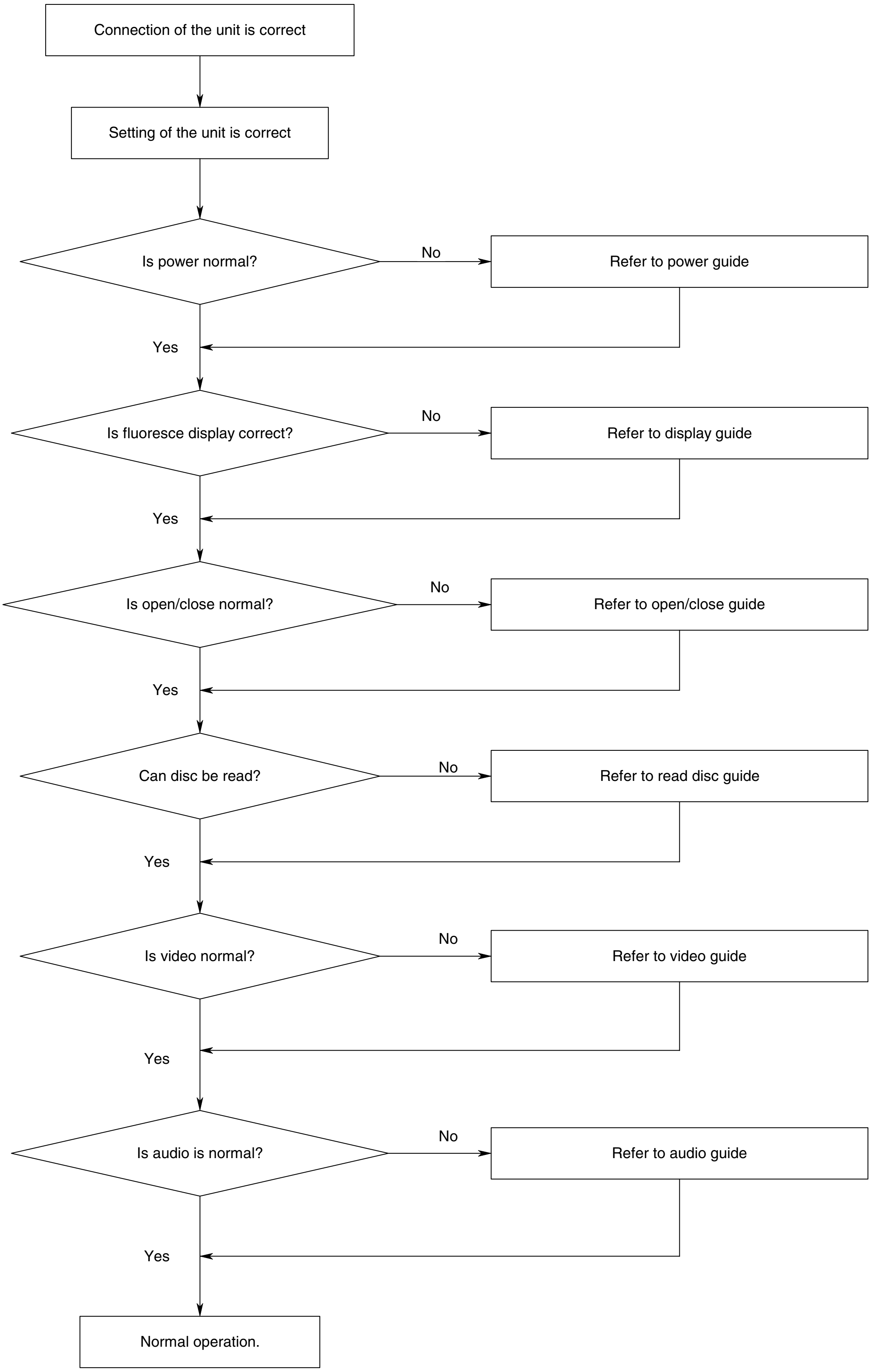
   Caution : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Normally harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

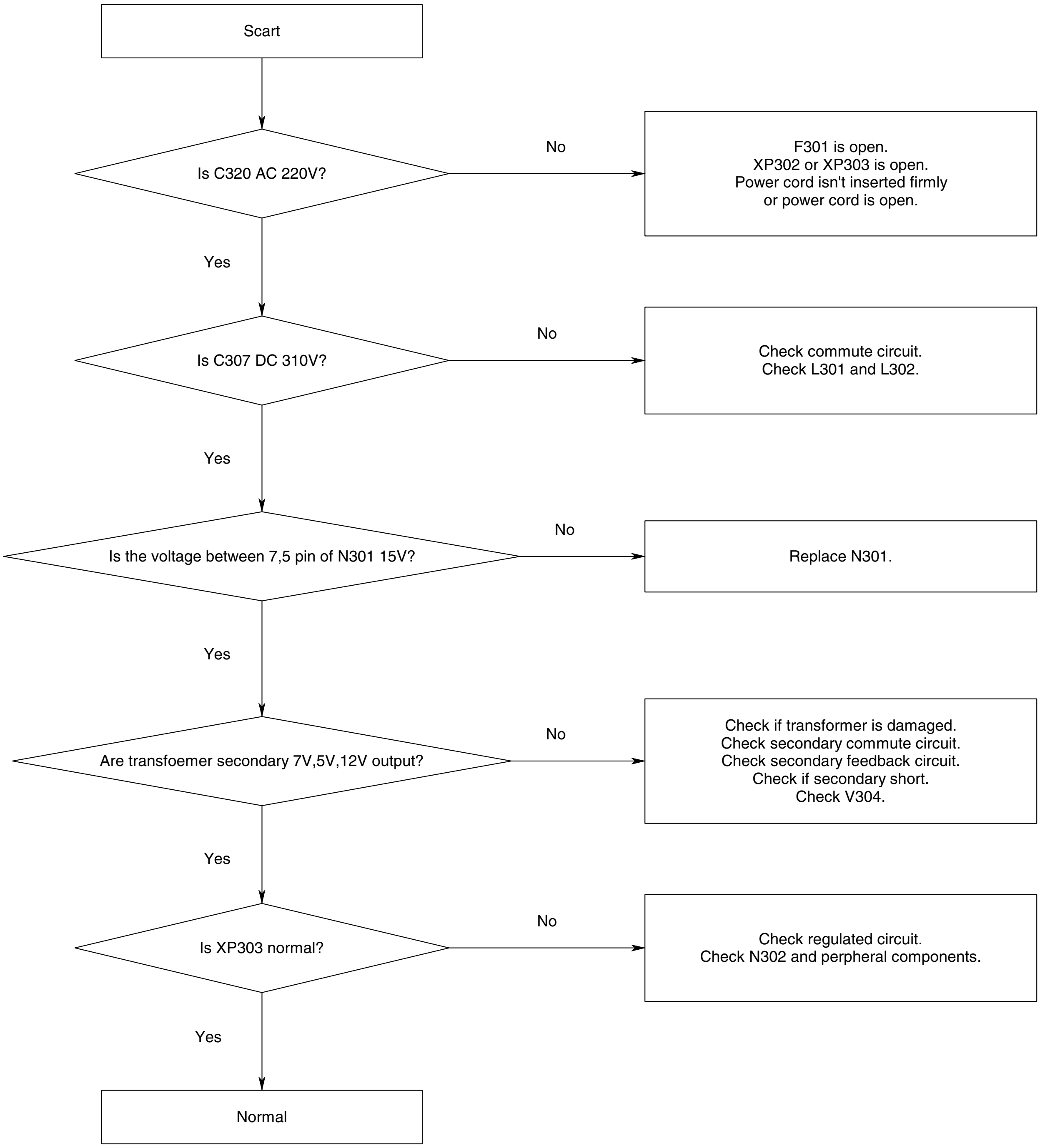
OVERALL BLOCK DIAGRAM



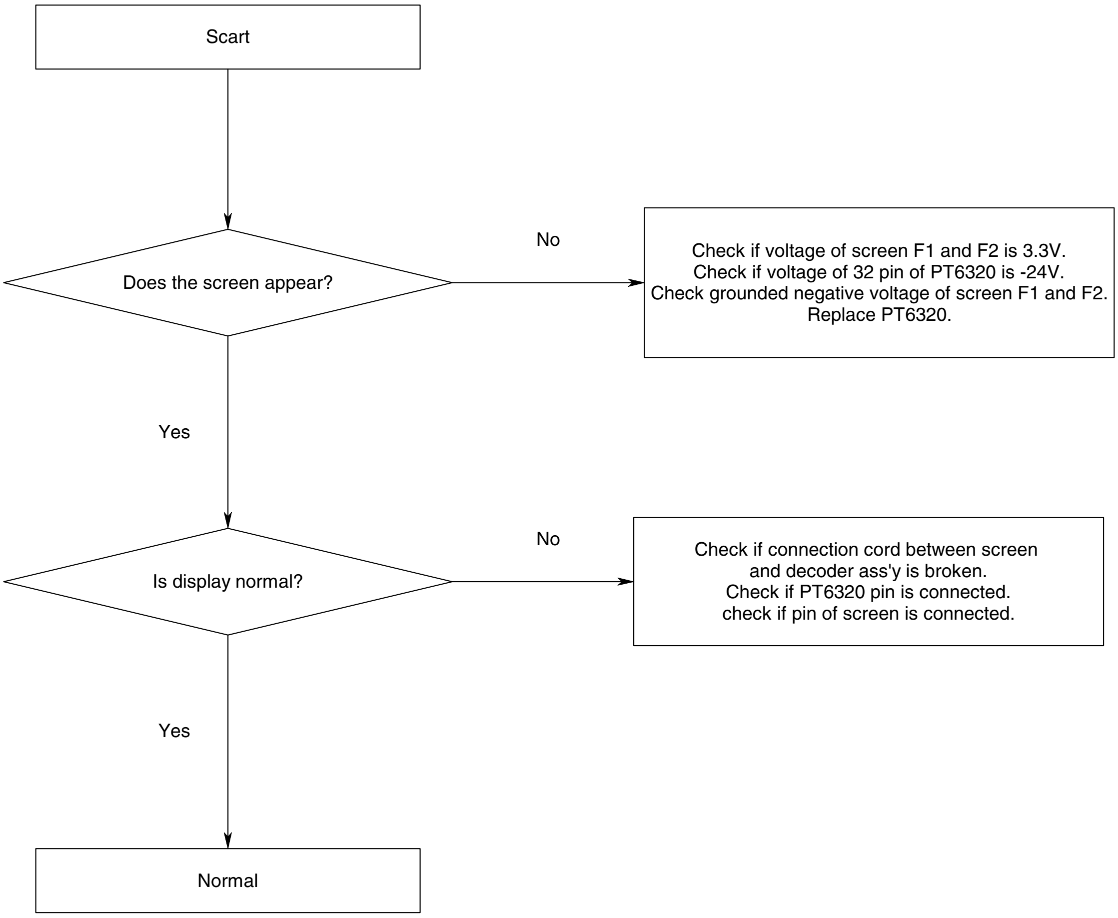
Electrical Trouble Shooting Guide



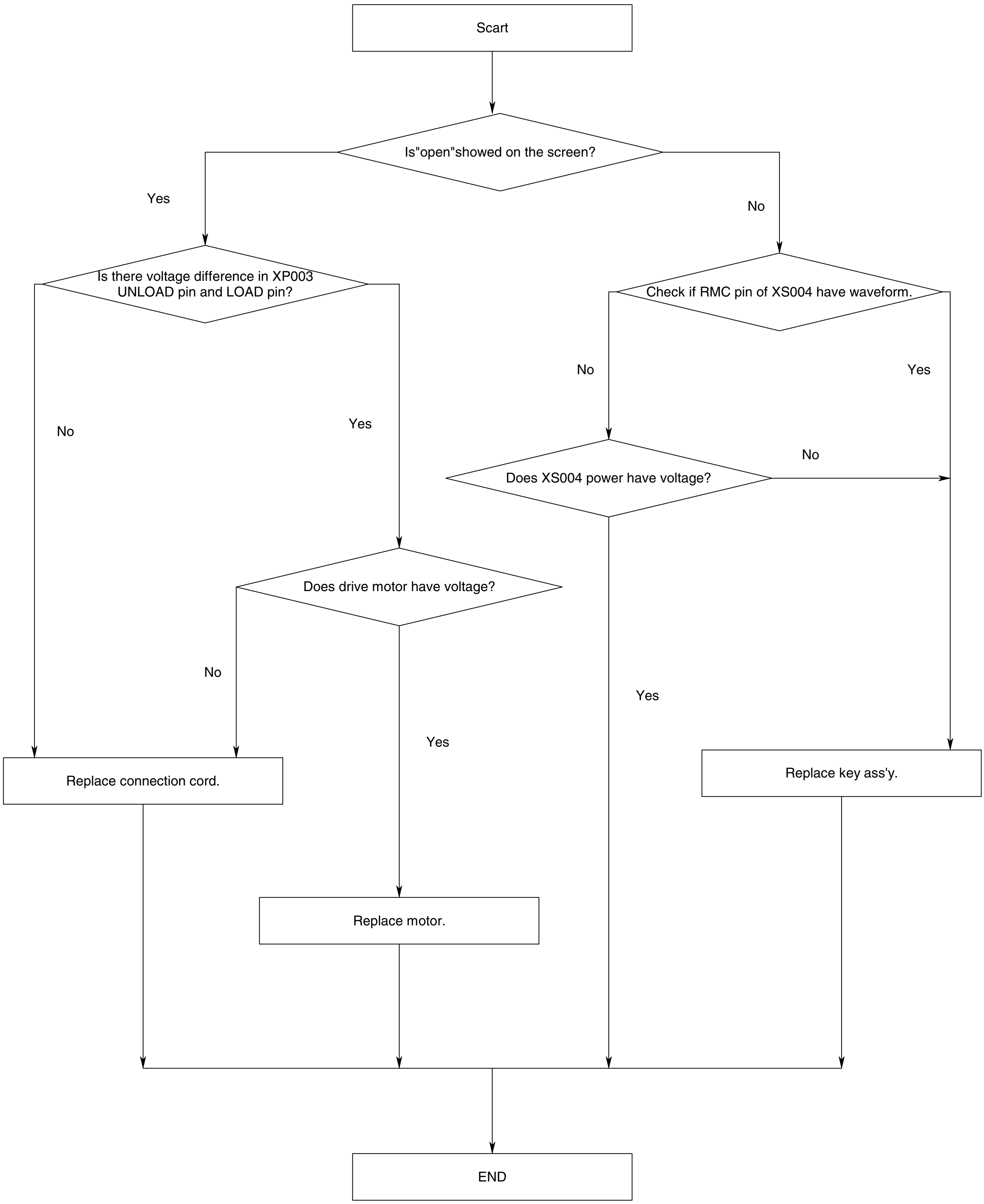
A Power Circuit abnormal



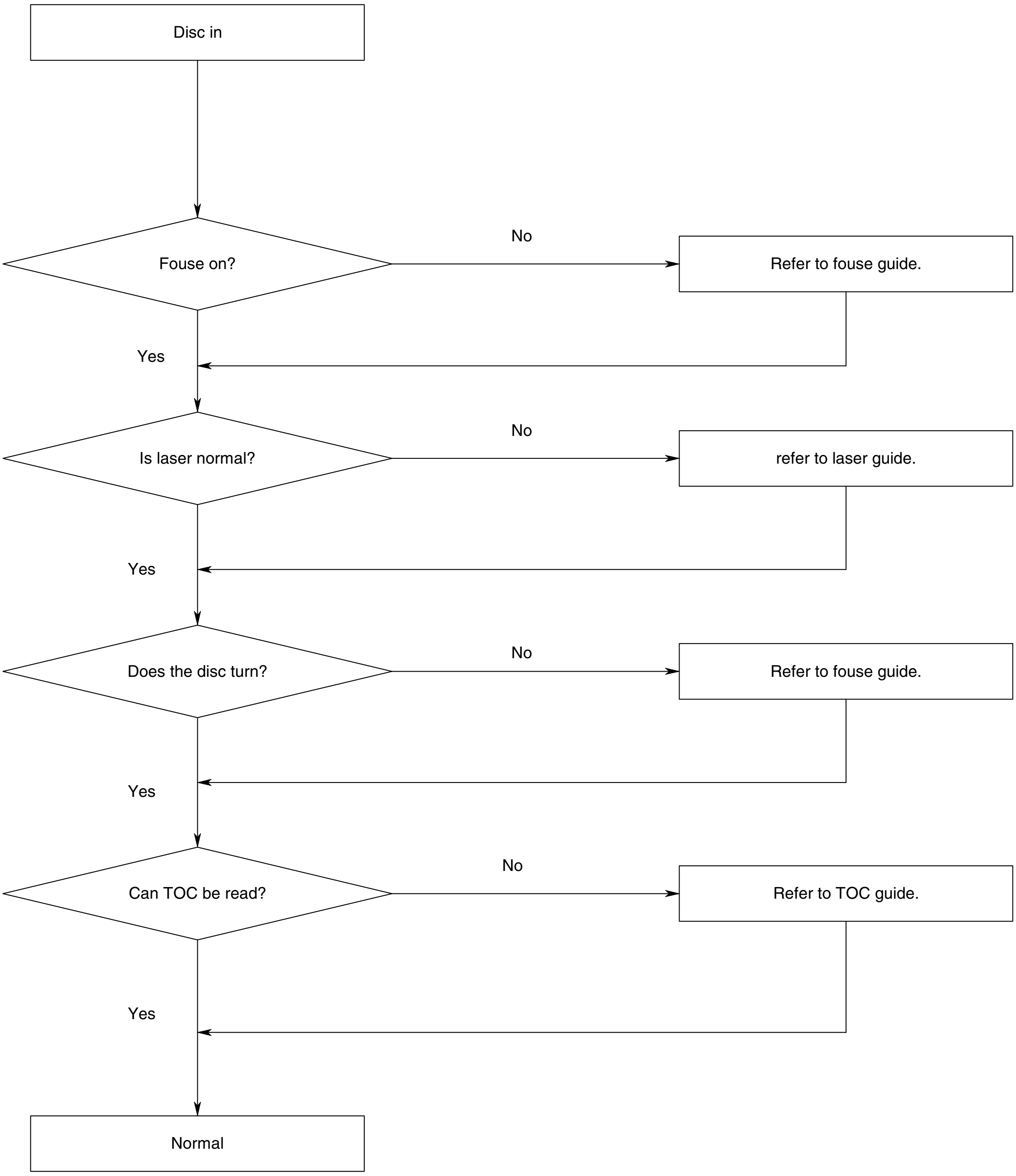
B Display abnormal



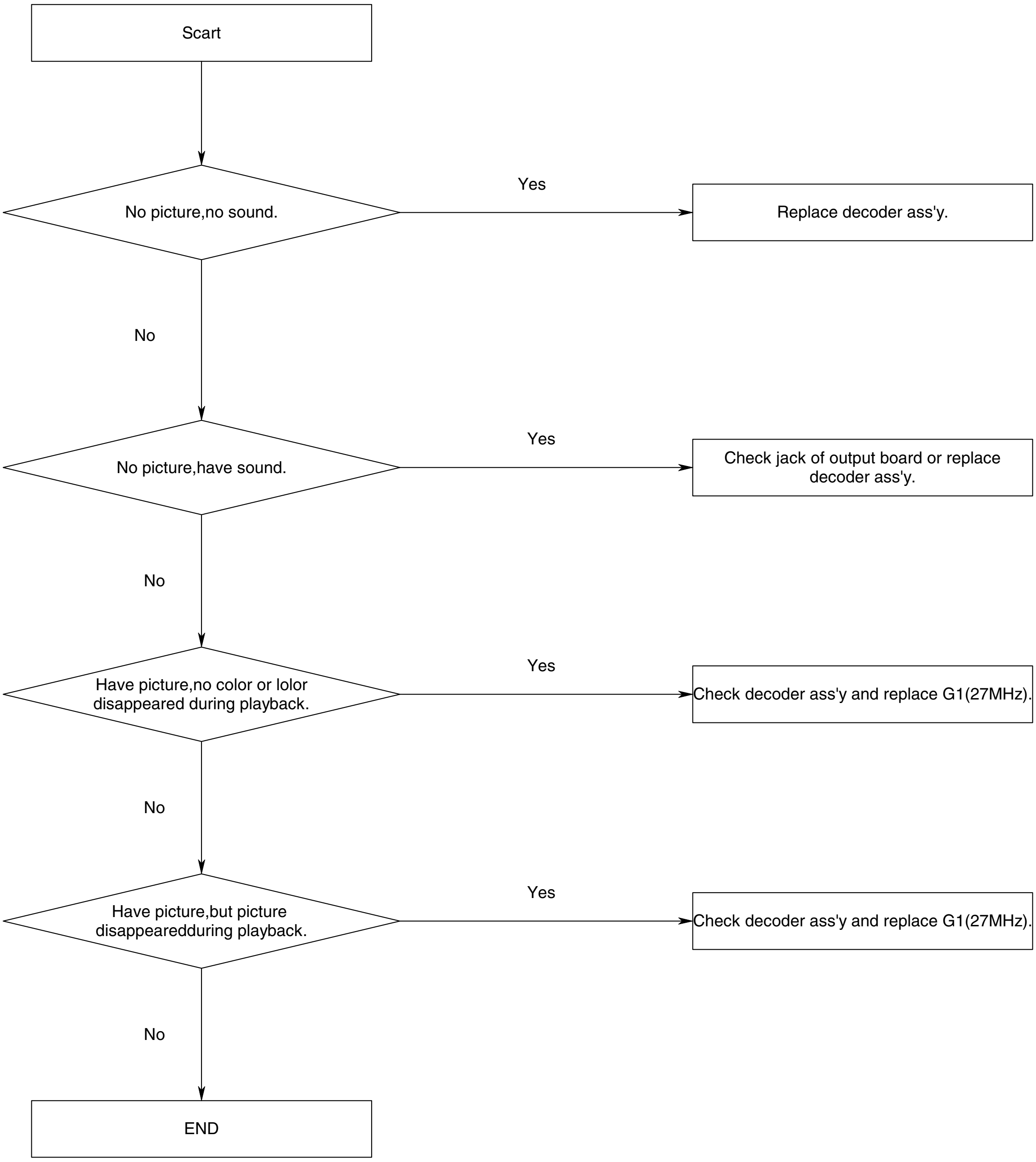
C Open/close abnormal



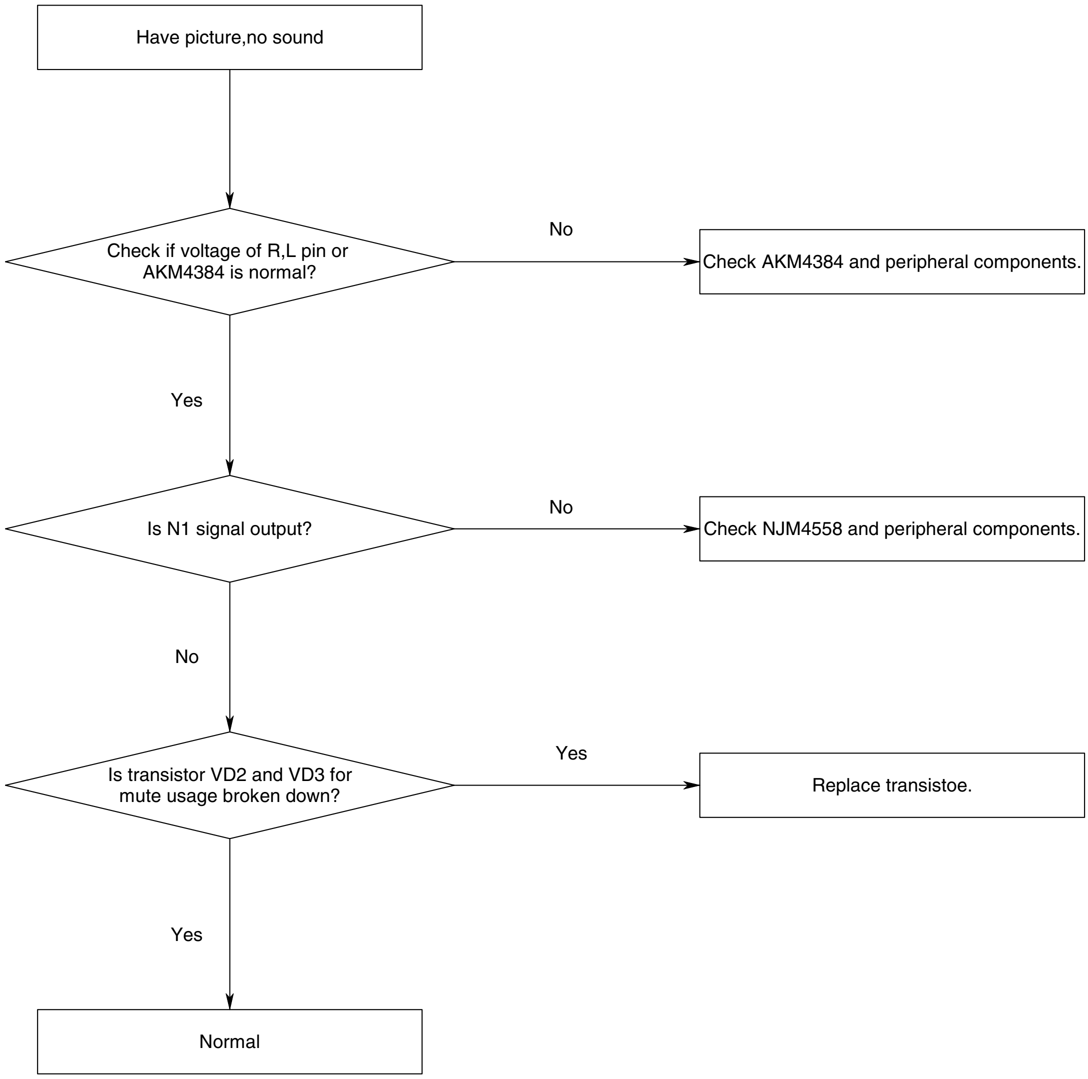
D Read disc abnormal



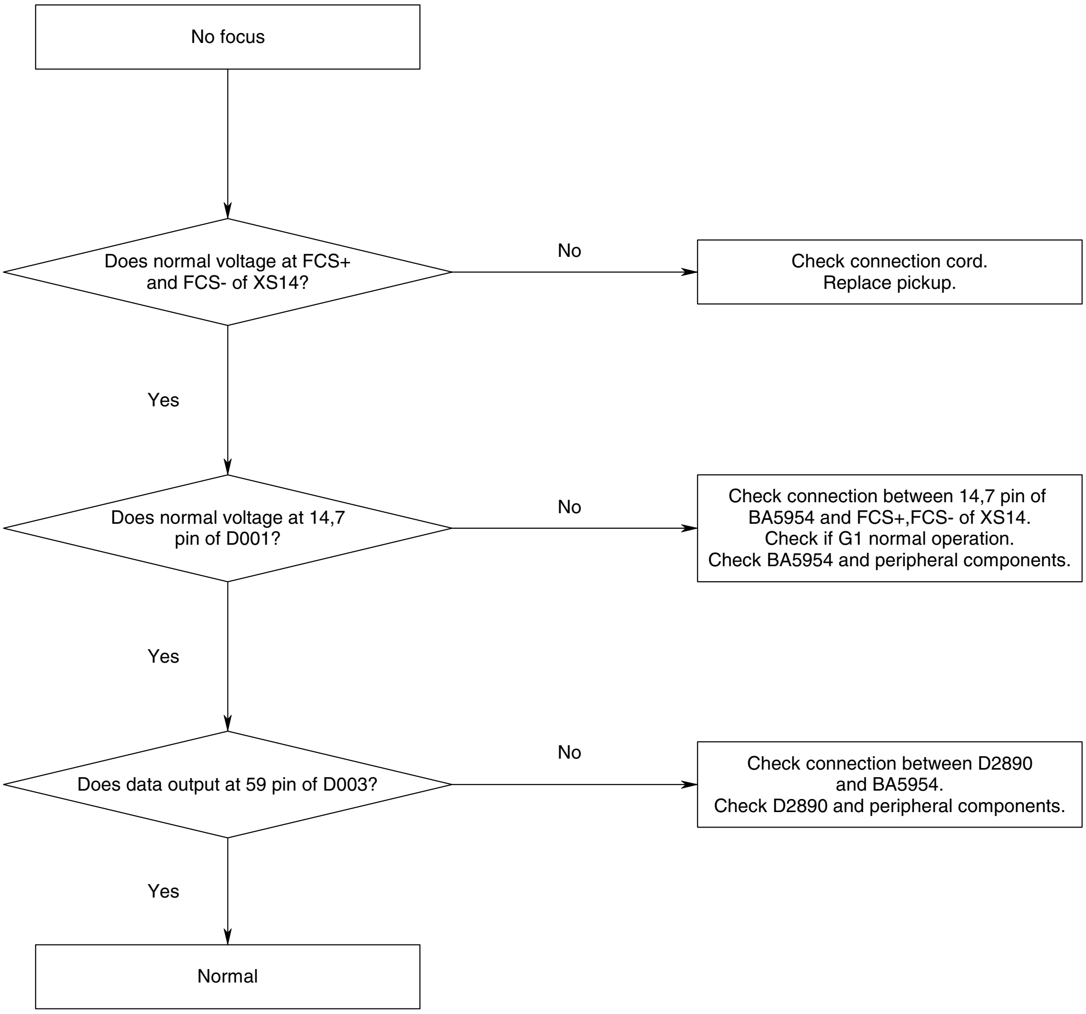
E Video abnormal



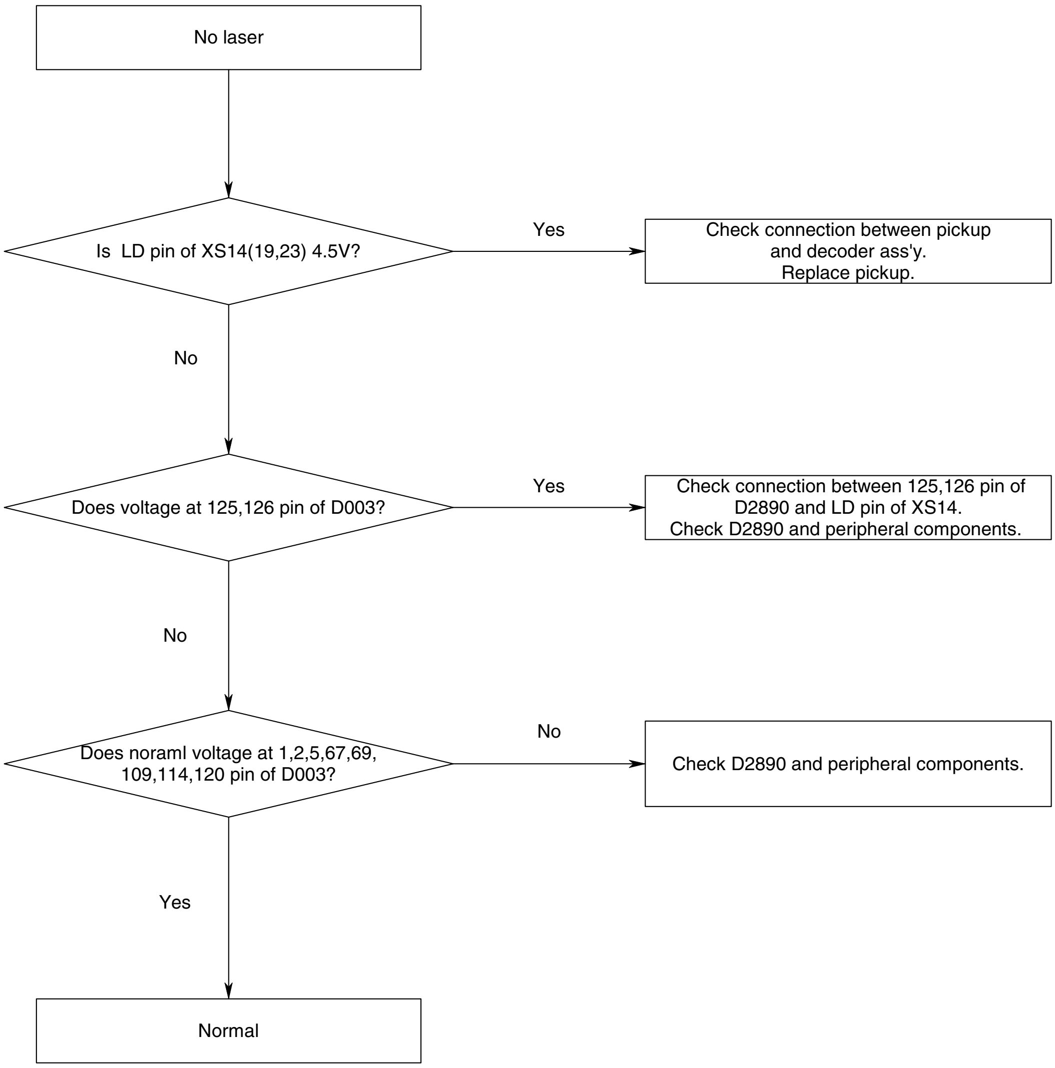
F Audio abnormal



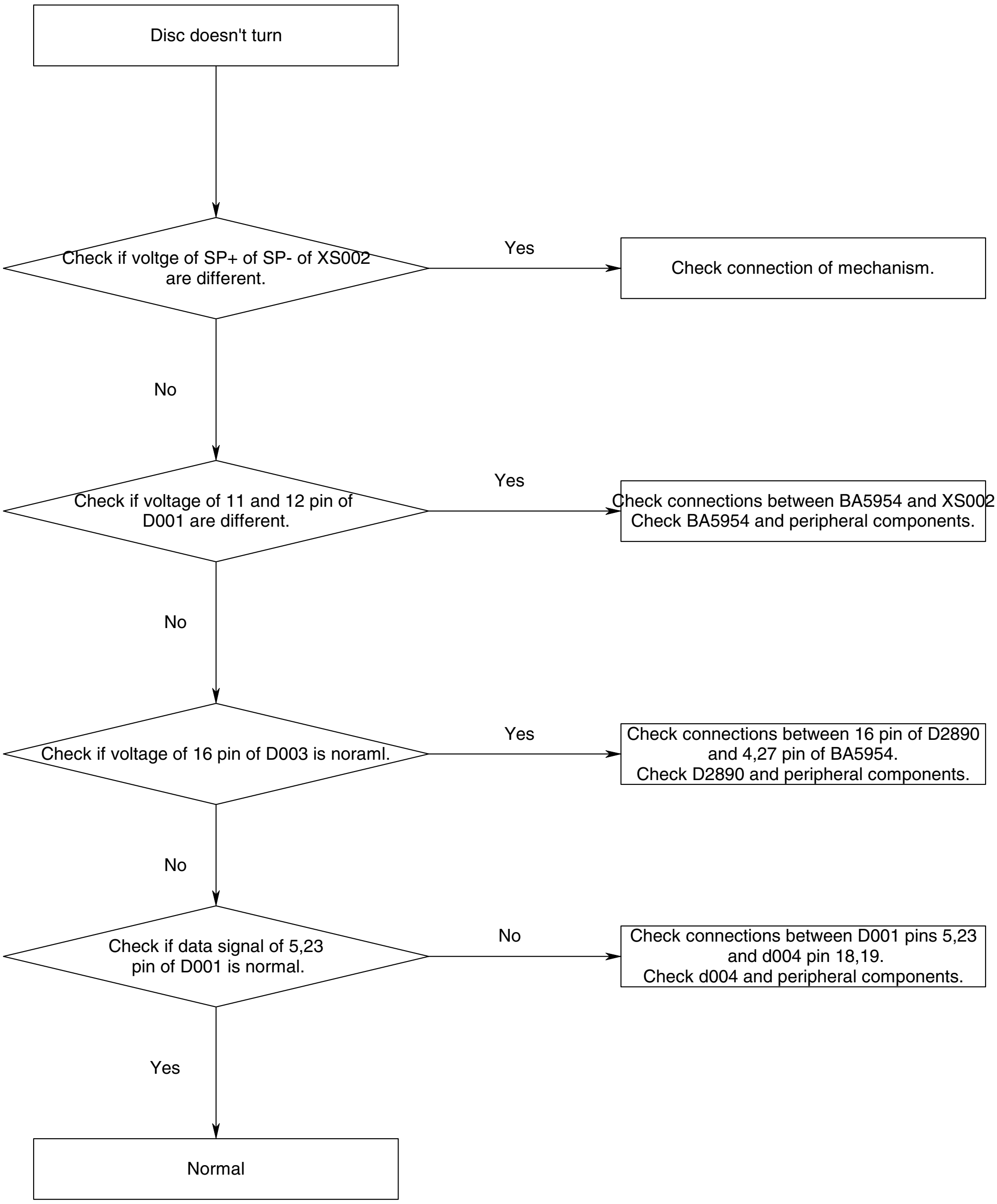
G Focus abnormal



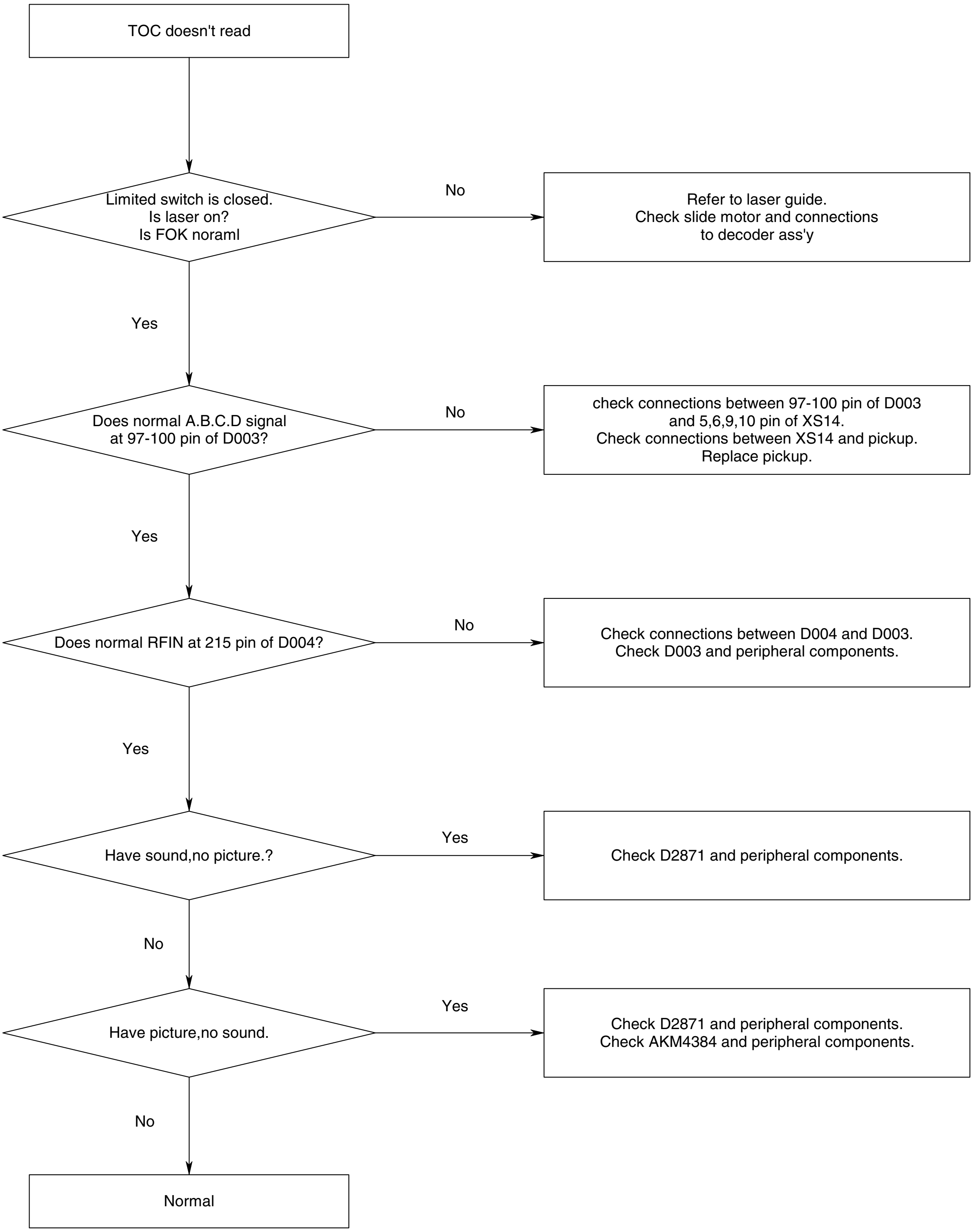
H Laser abnormal

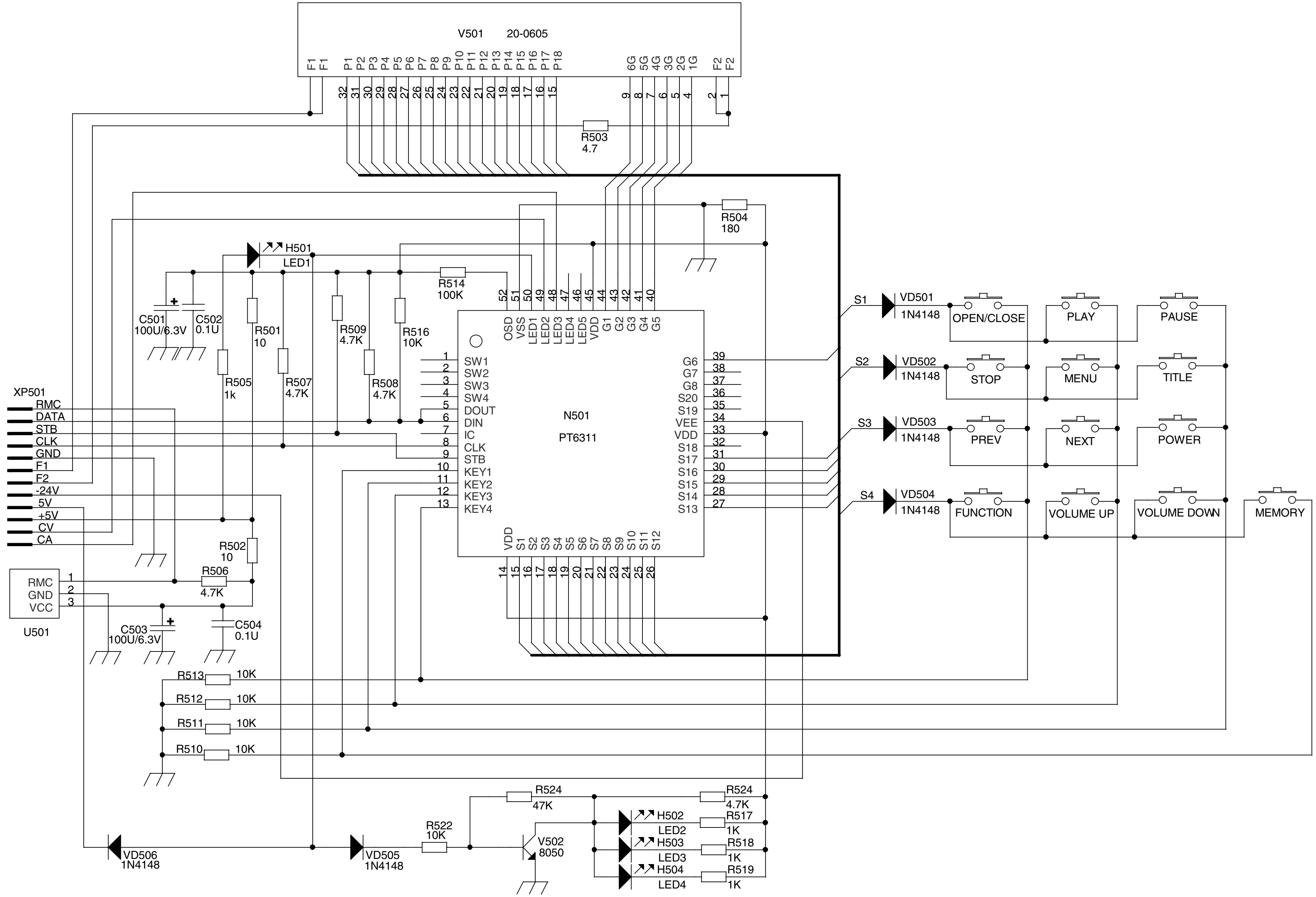


I Turn abnormal

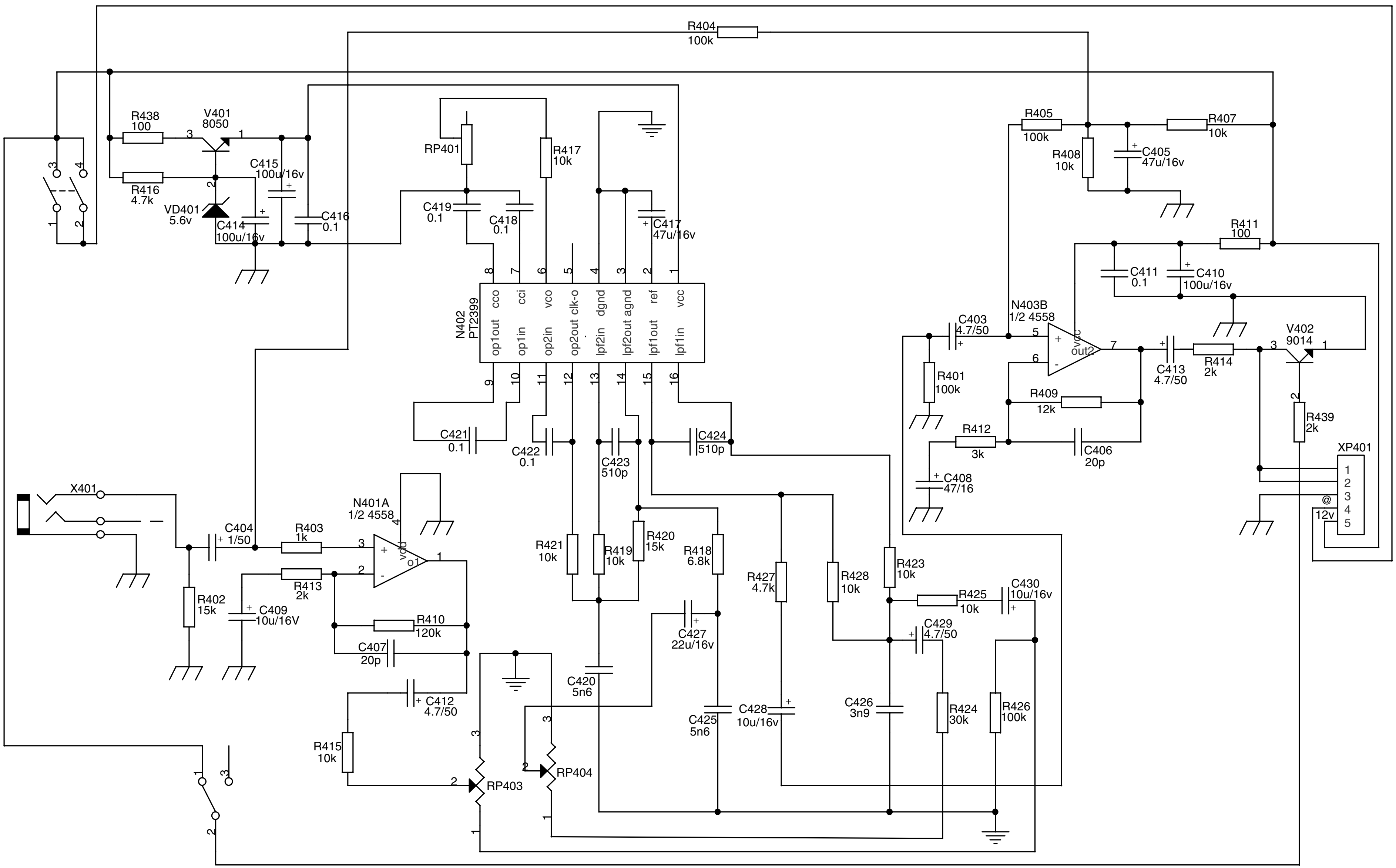


J TOC abnormal

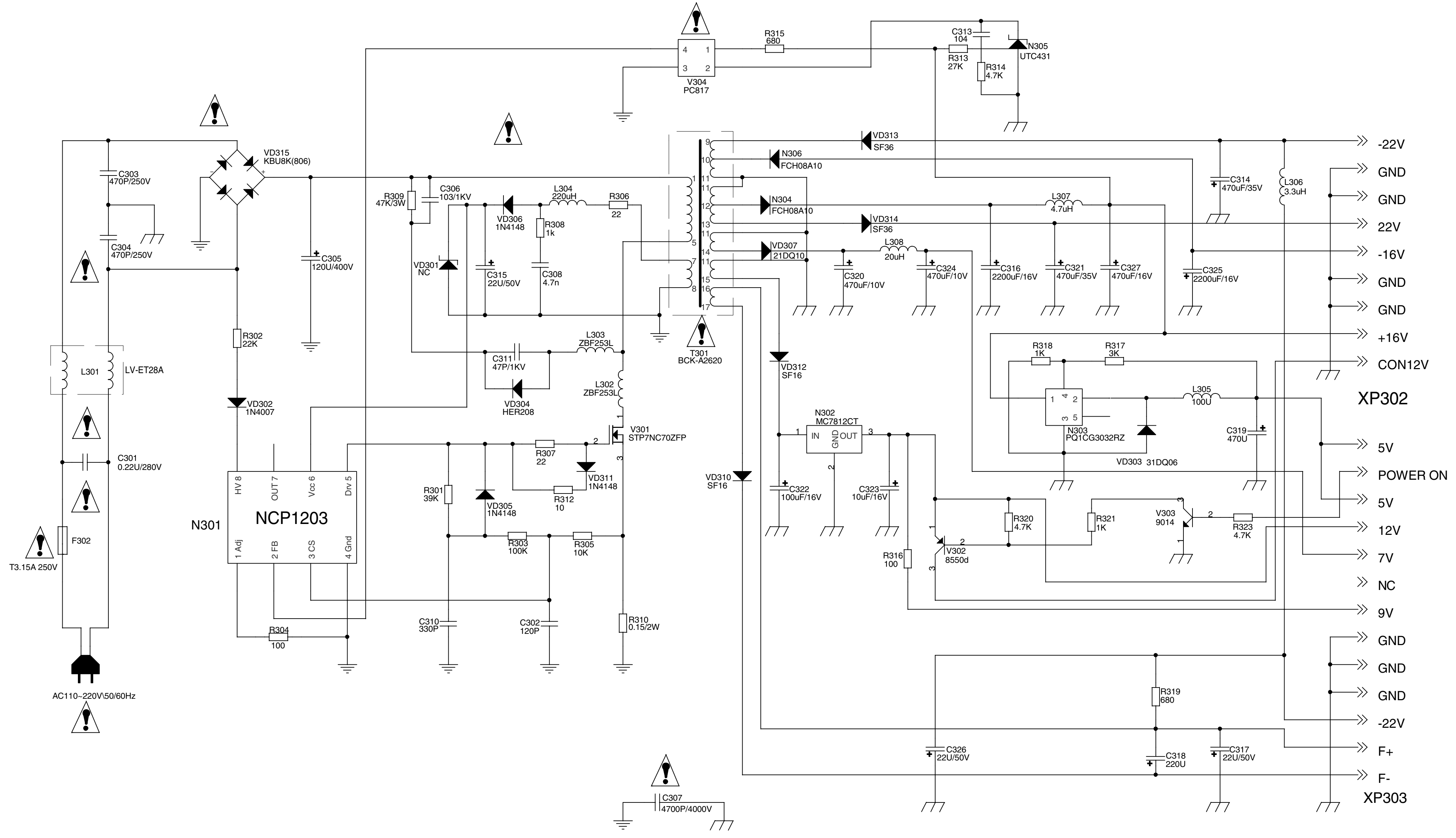




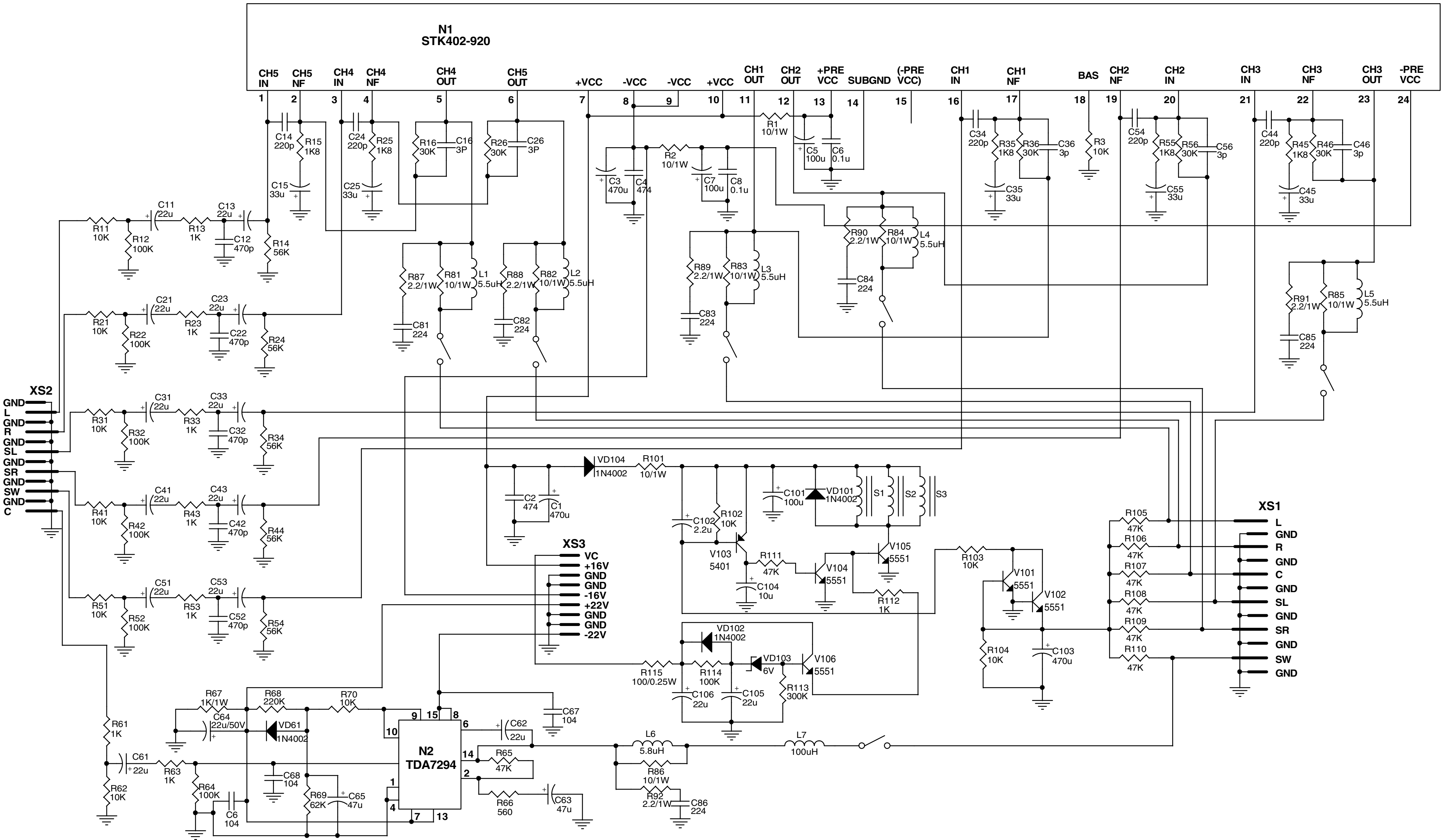
DVD2610 KEY CIRCUIT DIAGRAM



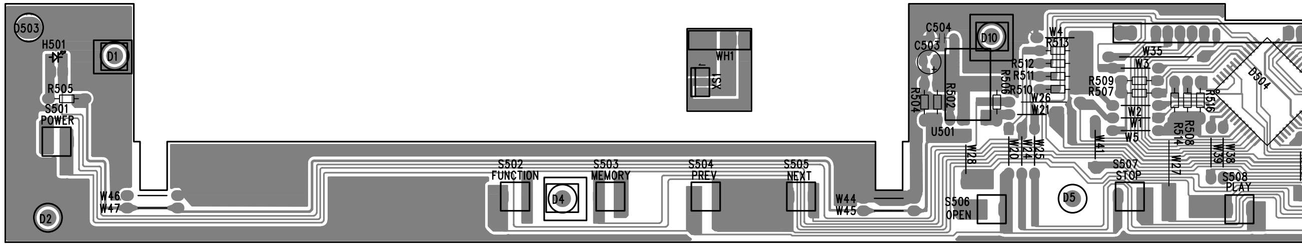
DVD2610 MIC CIRCUIT DIAGRAM



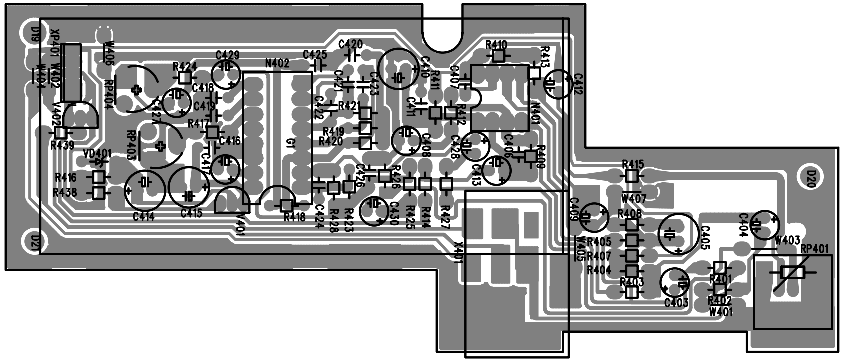
AD2620 POWER CIRCUIT DIAGRAM



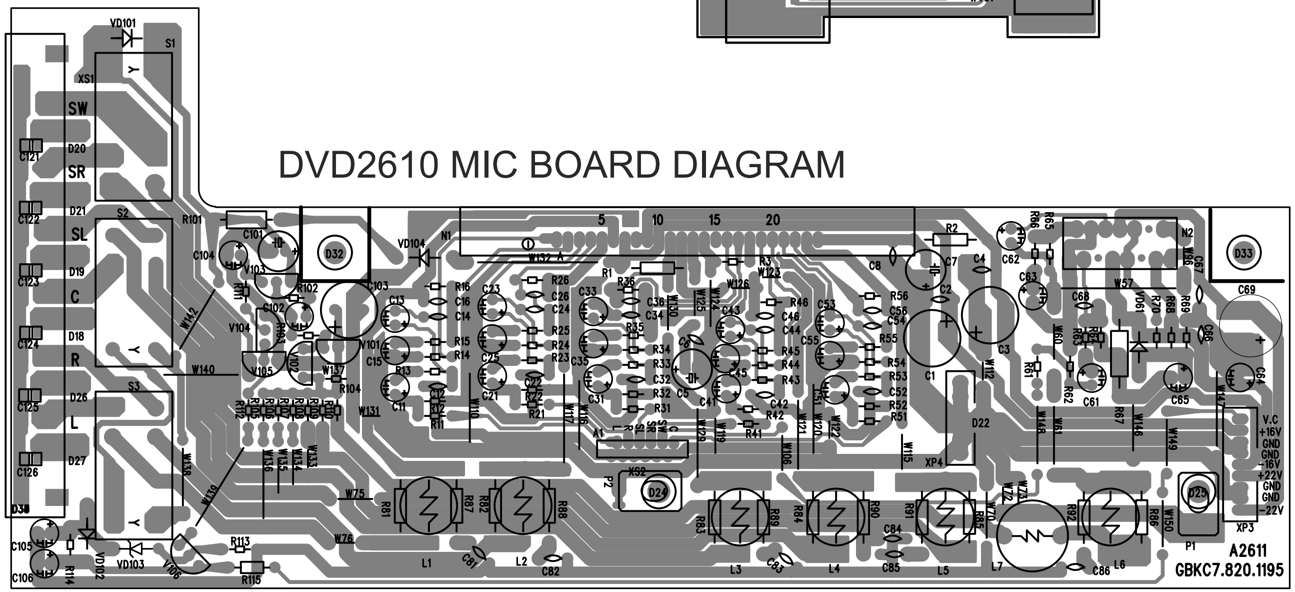
DVD2610 AMP CIRCUIT DIAGRAM



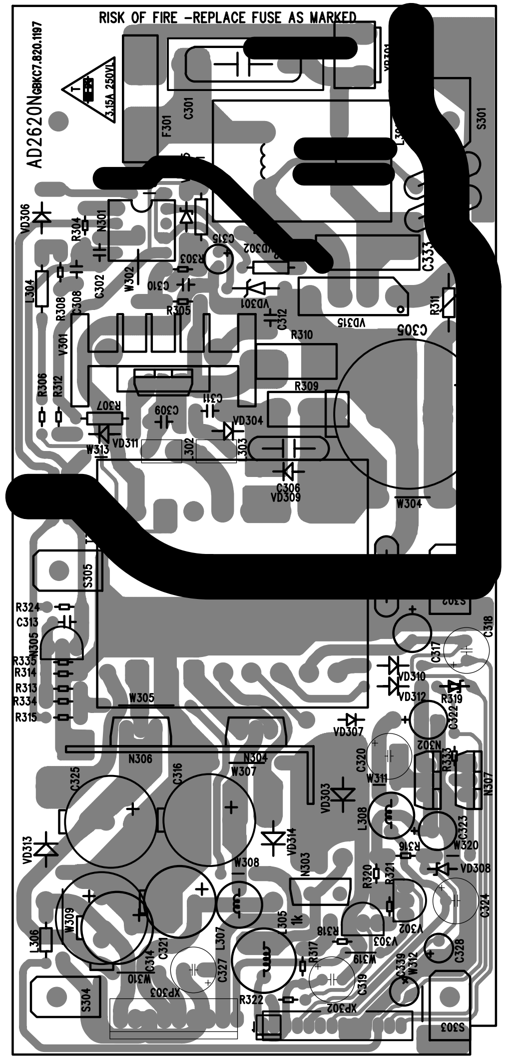
DVD2610 KEY BOARD DIAGRAM



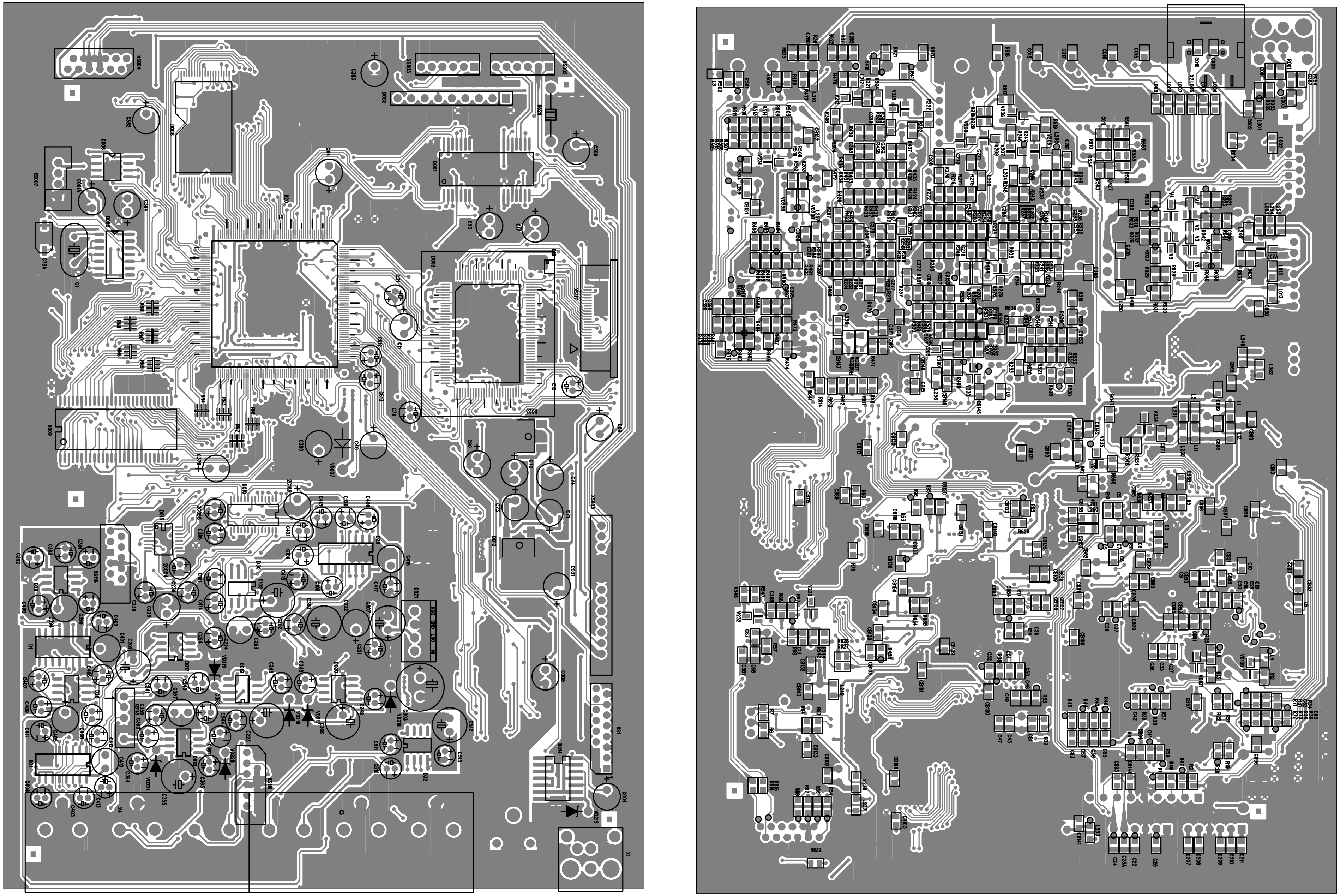
DVD2610 MIC BOARD DIAGRAM



DVD2611AMP BOARD DIAGRAM



AD2620 POWER BOARD DIAGRAM



DHB2698M1 DECODER BOARD DIAGRAM

ELECTRICAL PARTS LIST

PART No.	PART NAME	Q'TY
DVD2610		
21224	DHB2698M1 DECODER ASS'Y	1
750JSK	DVD750 ANTENNA ASS'Y	1
S7427-1	AD2620NAH POWER ASS'Y	1
S7423	A2611 AMP ASS'Y	1
S7340-2	DVD2610KH(L) KEY ASS'Y	1
S7358	D2610M MIC ASS'Y	1
S2865	SP-2610 SPEAKER ASS'Y	1
00960	TN100 RECEIVER	1
S2701	7# BATTERY	2
S2672	VDE POWER CORD	1
S8040	KHL-233C LOADING ASS'Y	1
S3024	POWER CORD HOLE	1
S1549g	DVD2610 OWNER MANUAL	1
S4308	A300 FM ANTENNA	1
S3021a	RCA CORD AUDIO	1
S3022a	RCA CORD VIDEO	1
S3142	CC-1.0×12×100	1
S3202	CC-1.0×12×170	1
S3251a	CC-0.5×24×210-N	1
S3467	KHL-DV34 LOADING WIRE	1
S06034C	RC-380HT REMOTE CONTROLLER (WHITE)	1
S2868	SL-2610 SUBWOOFER SPEAKER	1

REF No.	PART No.	PART NAME
DVD2610KH(L) KEY ASS'Y		
S501	G6434	TOUCH EVQ21504M(4.5mm)
S502	G6434	TOUCH EVQ21504M(4.5mm)
S503	G6434	TOUCH EVQ21504M(4.5mm)
S504	G6434	TOUCH EVQ21504M(4.5mm)
S505	G6434	TOUCH EVQ21504M(4.5mm)
S506	G6434	TOUCH EVQ21504M(4.5mm)
S507	G6434	TOUCH EVQ21504M(4.5mm)
S508	G6434	TOUCH EVQ21504M(4.5mm)
S509	G6434	TOUCH EVQ21504M(4.5mm)
S510	G6434	TOUCH EVQ21504M(4.5mm)
S511	G6434	TOUCH EVQ21504M(4.5mm)
C501	a3540	CD110-6.3V-100uF±20%
C502	a3304	CT4D-2F4-63V-0.1uF-S
C503	a3540	CD110-6.3V-100uF±20%
C504	a3304	CT4D-2F4-63V-0.1uF-S
C505	a3450	CD11CX-22uF-M-16V
R501	G0705	RT13-0.167W-10±5%
R502	G0705	RT13-0.167W-10±5%
R503	G0704	RT13-0.167W-4.7±5%
R504	G0714	RT13-0.167W-180±5%
R505	G0719	RT13-0.167W-1K±5%
R506	G0728	RT13-0.167W-4.7K±5%
R507	G0728	RT13-0.167W-4.7K±5%
R508	G0728	RT13-0.167W-4.7K±5%
R509	G0728	RT13-0.167W-4.7K±5%
R510	G0735	RT13-0.167W-10K±5%
R511	G0735	RT13-0.167W-10K±5%
R512	G0735	RT13-0.167W-10K±5%
R513	G0735	RT13-0.167W-10K±5%
R514	G0784	RT13-0.167W-56K±5%
R516	G0735	RT13-0.167W-10K±5%
R517	G0714	RT13-0.167W-180±5%
R518	G0714	RT13-0.167W-180±5%
R519	G0714	RT13-0.167W-180±5%
R522	G0738	RT13-0.167W-15K±5%
R523	G0728	RT13-0.167W-4.7K±5%
VD501	a5004	1N4148
VD502	a5004	1N4148
VD503	a5004	1N4148

REF No.	PART No.	PART NAME
VD504	a5004	1N4148
VD505	a5004	1N4148
VD506	a1134	HZ4B2
LED501	a1500	RED LED
H502	a1601	BLUE LED
H503	a1601	BLUE LED
H504	a1601	BLUE LED
V502	a5009	C9014C
U501	a6444	HS0038A2 RECEIVER
D501	P4399	PT6311
VE501	a6918a	VFD20-0605A
XS502	P6783	12 PINS SOCKET
XS505	a9061	B-3B-PH SOCKET
WH501	a6216	KHX3-3WHD
D2610M MIC ASS'Y		
RESISTOR		
R401	G0753	RT13-0.167W-100K±5%
R402	G0738	RT13-0.167W-15K±5%
R403	G0719	RT13-0.167W-1K±5%
R404	G0753	RT13-0.167W-100K±5%
R405	G0753	RT13-0.167W-100K±5%
R407	G0735	RT13-0.167W-10K±5%
R408	G0735	RT13-0.167W-10K±5%
R409	G0737	RT13-0.167W-12K±5%
R410	G0754	RT13-0.167W-120K±5%
R411	G0712	RT13-0.167W-100±5%
R412	G0724	RT13-0.167W-3K±5%
R413	G0721	RT13-0.167W-2K±5%
R414	G0721	RT13-0.167W-2K±5%
R415	G0735	RT13-0.167W-10K±5%
R416	G0728	RT13-0.167W-4.7K±5%
R417	G0735	RT13-0.167W-10K±5%
R418	G0731	RT13-0.167W-6.8K±5%
R419	G0735	RT13-0.167W-10K±5%
R420	G0738	RT13-0.167W-15K±5%
R421	G0735	RT13-0.167W-10K±5%
R423	G0735	RT13-0.167W-10K±5%
R424	G0743	RT13-0.167W-30K±5%
R425	G0735	RT13-0.167W-10K±5%
R427	G0728	RT13-0.167W-4.7K±5%

REF No.	PART No.	PART NAME
R428	G0735	RT13-0.167W-10K±5%
R438	G0712	RT13-0.167W-100±5%
R439	G0721	RT13-0.167W-2K±5%
RHEOSTAT		
RP401	a0638b	WH9011-50KB-F20
RP403	a0511	WH06-2-22K
RP404	a0640	WH0615-47K
CAPACITOR		
C403	a3508	CD110-16V-4.7uF-M
C404	a3505	CD110-1u-M-16V
C405	a3512	CD110-47u-M-16V
C406	a2015	CC1-63V-05B-20K-CH
C407	a2015	CC1-63V-05B-20K-CH
C408	a3512	CD110-47u-M-16V
C409	a3509	CD110-16V-10u-M
C410	a3513	CD110X-16V-100u-M
C411	a3304	CT4D-2F4-63V-0.1uF-S
C412	a3508	CD110-16V-4.7uF-M
C413	a3508	CD110-16V-4.7uF-M
C414	a3513	CD110X-16V-100u-M
C415	a3513	CD110X-16V-100u-M
C416	a3304	CT4D-2F4-63V-0.1uF-S
C417	a3512	CD110-16V-47uF-M
C418	a3304	CT4D-2F4-63V-0.1uF-S
C419	a3304	CT4D-2F4-63V-0.1uF-S
C420	a3044	CL11-100V-5600P-K
C421	a3304	CT4D-2F4-63V-0.1uF-S
C422	a3304	CT4D-2F4-63V-0.1uF-S
C423	a2038	CC1-63V-10B-511K-SL
C424	a2038	CC1-63V-10B-511K-SL
C425	a3044	CL11-100V-5600P-K
C426	a3041	CL11-100V-3900P-K
C427	a3510	CD110-16V-22uF-M
C428	a3509	CD110-16V-10u-M
C429	a3508	CD110-16V-4.7uF-M
C430	a3509	CD110-16V-10u-M
OTHER		
VD401	a1118	HZ6A3(1/2W,5.6V)
V401	a5014	C8050C
V402	a5009	C9014C

REF No.	PART No.	PART NAME
N401	a4042b	UTC4558
N402	a4503	PT2399
X401	a6871	CKX-6.35-7 JACK
XP401	a8825	MIC WIRE
AD2620NAH POWER ASS'Y		
RESISTOR		
R301	G0080	RT14-0.25W-39K±5%
R302	G0010	RT14-0.25W-22±5%
R303	G0753	RT13-0.167W-100K±5%
R304	G0712	RT13-0.167W-100±5%
R305	G0735	RT13-0.167W-10K±5%
R306	G0707	RT13-0.167W-22±5%
R307	G0010	RT14-0.25W-22±5%
R308	G0719	RT13-0.167W-1K±5%
R309	a0416	RY27-3W-47K±5%
R310	a0415	RY27-2W-0.22±10%
R312	G0705	RT13-0.167W-10±5%
R313	G0804	RT13-0.167W-27K±5%
R314	G0728	RT13-0.167W-4.7K±5%
R315	G0778	RT13-0.167W-680±5%
R316	G0712	RT13-0.167W-100±5%
R317	G0724	RT13-0.167W-3K±5%
R318	G0719	RT13-0.167W-1K±5%
R319	G0778	RT13-0.167W-680±5%
R320	G0728	RT13-0.167W-4.7K±5%
R321	G0719	RT13-0.167W-1K±5%
R322	G0728	RT13-0.167W-4.7K±5%
CAPACITOR		
C301	a3447a	MKP61-275VAC-0.22u-K
C302	a2028	CC1-05B-121K-63V-SL
C303	a3312	CT81-12B-2B4-471K-400VAC-YA
C304	a3312	CT81-12B-2B4-471K-400VAC-YA
C305	a3496	CD293-120uF-M-400V
C306	a2077	CT81-14B-2E4-103M-1KV
C307	a2081	CT81-18B-2E4-472M-400VAC-YA
C308	a2048	CT1-05B-472M-63V-Y5V
C310	a2035	CC1-08B-331K-63V-SL
C311	a2063	CC81-06B-47K-1KV-SL
C313	a2056	CS1-06B-104Z-63V-Y5V
C314	a3495a	CD288-2200uF-M-25V

REF No.	PART No.	PART NAME
C315	a3607	CD110X-22uF-M-50V
C316	a3495a	CD288-2200uF-M-25V
C317	a3607	CD110X-22uF-M-50V
C318	a3514	CD110X-220uF-M-16V
C319	a3561	CD110X-470uF-M-10V
C320	a3561	CD110X-470uF-M-10V
C321	a3244	CD288-470uF-M-35V
C322	a3613	CD110X-100uF-M-25V
C323	a3509	CD110-10uF-M-16V
C324	a3561	CD110X-470uF-M-10V
C325	a3495a	CD288-2200uF-M-25V
C326	a3607	CD110X-22uF-M-50V
C327	a3495a	CD288-2200uF-M-25V
DIODE		
VD302	a5005a	1N4007-YG
VD303	a1568a	SR306
VD304	a1598	HER208-YG
VD305	a5004	1N4148
VD306	a5004	1N4148
VD307	a1203	21DQ10
VD310	a1202a	SF16-YG
VD311	a5004	1N4148
VD312	a1202a	SF16-YG
VD313	a5129	SF36-YG
VD314	a5129	SF36-YG
VD315	a1597	KBU8K(806)
TRIODE.IC		
N301	a4756	NCP1203P60
N302	a4031a	MC7812CT
N303	a4720	PQ1CG3032RZ
N304	a4748	FCH08A10
N305	a4557a	UTC431
N306	a4748	FCH08A10
V301	a5128	STP7NC70ZFP
V302	a5104	C8550D
V303	a5009	C9014C
V304	a5114	PC817
OTHER		
T301	a7348	DCK-2620 TRANSFORMER
	a6929a	FC502HA FUSE HOLDER

REF No.	PART No.	PART NAME
L301	a6686	LV-ET28A FILTER
L302	a7020	ZBF253L-4
L303	a7020	ZBF253L-4
L304	a7233	220uH
L305	a7005	100uH
L306	a6452	3.3uH
L307	a7231	COIL-4.7uH-SZ
L308	a6621	COIL-0.02mH
F301	a6760	FUSE 6183.15MXA
XP301	a6826	3951P03V SOCKET
XP302	a9131	13P WIRE
XP303	a9127	9P WIRE
A2611 AMP ASS'Y		
R1	a0476	RJ-1W-10±5%
R2	a0476	RJ-1W-10±5%
R3	G0735	RT13-0.167W-10K±5%
R11	G0735	RT13-0.167W-10K±5%
R12	G0753	RT13-0.167W-100K±5%
R13	G0719	RT13-0.167W-1K±5%
R14	G0784	RT13-0.167W-56K±5%
R15	G0782	RT13-0.167W-1.8K±5%
R16	G0743	RT13-0.167W-30K±5%
R21	G0735	RT13-0.167W-10K±5%
R22	G0753	RT13-0.167W-100K±5%
R23	G0719	RT13-0.167W-1K±5%
R24	G0784	RT13-0.167W-56K±5%
R25	G0782	RT13-0.167W-1.8K±5%
R26	G0743	RT13-0.167W-30K±5%
R31	G0735	RT13-0.167W-10K±5%
R32	G0753	RT13-0.167W-100K±5%
R33	G0719	RT13-0.167W-1K±5%
R34	G0784	RT13-0.167W-56K±5%
R35	G0782	RT13-0.167W-1.8K±5%
R36	G0743	RT13-0.167W-30K±5%
R41	G0735	RT13-0.167W-10K±5%
R42	G0753	RT13-0.167W-100K±5%
R43	G0719	RT13-0.167W-1K±5%
R44	G0784	RT13-0.167W-56K±5%
R45	G0782	RT13-0.167W-1.8K±5%
R46	G0743	RT13-0.167W-30K±5%

REF No.	PART No.	PART NAME
R51	G0735	RT13-0.167W-10K±5%
R52	G0753	RT13-0.167W-100K±5%
R53	G0719	RT13-0.167W-1K±5%
R54	G0784	RT13-0.167W-56K±5%
R55	G0782	RT13-0.167W-1.8K±5%
R56	G0743	RT13-0.167W-30K±5%
R61	G0719	RT13-0.167W-1K±5%
R62	G0735	RT13-0.167W-10K±5%
R63	G0719	RT13-0.167W-1K±5%
R64	G0753	RT13-0.167W-100K±5%
R65	G0748	RT13-0.167W-47K±5%
R66	G0776	RT13-0.167W-560±5%
R67	a0452	RJ-1W-1K±5%
R68	G0759	RT13-0.167W-220K±5%
R69	G0750	RT13-0.167W-62K±5%
R70	G0735	RT13-0.167W-10K±5%
R81	a0476	RJ-1W-10±5%
R82	a0476	RJ-1W-10±5%
R83	a0476	RJ-1W-10±5%
R84	a0476	RJ-1W-10±5%
R85	a0476	RJ-1W-10±5%
R86	a0476	RJ-1W-10±5%
R87	a0436	RY-1W-2.2±5%
R88	a0436	RY-1W-2.2±5%
R89	a0436	RY-1W-2.2±5%
R90	a0436	RY-1W-2.2±5%
R91	a0436	RY-1W-2.2±5%
R92	a0436	RY-1W-2.2±5%
R101	a0476	RJ-1W-10±5%
R102	G0735	RT13-0.167W-10K±5%
R103	G0735	RT13-0.167W-10K±5%
R104	G0735	RT13-0.167W-10K±5%
R105	G0748	RT13-0.167W-47K±5%
R106	G0748	RT13-0.167W-47K±5%
R107	G0748	RT13-0.167W-47K±5%
R108	G0748	RT13-0.167W-47K±5%
R109	G0748	RT13-0.167W-47K±5%
R110	G0748	RT13-0.167W-47K±5%
R111	G0748	RT13-0.167W-47K±5%
R112	G0719	RT13-0.167W-1K±5%

REF No.	PART No.	PART NAME
R113	G0761	RT13-0.167W-300K±5%
R114	G0753	RT13-0.167W-100K±5%
R115	G0023	RT14-0.25W-100±5%
CAPACITOR		
C1	a3521	CD110X-470uF-M-25V
C2	a3308	CT4D-2F4-0.47uF-63V-S
C3	a3521	CD110X-470uF-M-25V
C4	a3308	CT4D-2F4-0.47uF-63V-S
C5	a3613	CD110X-100uF-M-25V
C6	a2056	CS1-06B-104Z-63V-Y5V
C7	a3613	CD110X-100uF-M-25V
C8	a2056	CS1-06B-104Z-63V-Y5V
C11	a3510	CD110-22uF-M-16V
C12	a2324	CT1-05B-471K-50V-Y5P
C13	a3510	CD110-22uF-M-16V
C14	a2032	CC1-05B-221K-63V-SL
C15	a3511	CD110-33uF-M-16V
C16	a2006	CC1-05B-3.3D-63V-CH
C21	a3510	CD110-22uF-M-16V
C22	a2324	CT1-05B-471K-50V-Y5P
C23	a3510	CD110-22uF-M-16V
C24	a2032	CC1-05B-221K-63V-SL
C25	a3511	CD110-33uF-M-16V
C26	a2006	CC1-05B-3.3D-63V-CH
C31	a3510	CD110-22uF-M-16V
C32	a2324	CT1-05B-471K-50V-Y5P
C33	a3510	CD110-22uF-M-16V
C34	a2032	CC1-05B-221K-63V-SL
C35	a3511	CD110-33uF-M-16V
C36	a2006	CC1-05B-3.3D-63V-CH
C41	a3510	CD110-22uF-M-16V
C42	a2324	CT1-05B-471K-50V-Y5P
C43	a3510	CD110-22uF-M-16V
C44	a2032	CC1-05B-221K-63V-SL
C45	a3511	CD110-33uF-M-16V
C46	a2006	CC1-05B-3.3D-63V-CH
C51	a3510	CD110-22uF-M-16V
C52	a2324	CT1-05B-471K-50V-Y5P
C53	a3510	CD110-22uF-M-16V
C54	a2032	CC1-05B-221K-63V-SL

REF No.	PART No.	PART NAME
C55	a3511	CD110-33uF-M-16V
C56	a2006	CC1-05B-3.3D-63V-CH
C61	a3510	CD110-22uF-M-16V
C62	a3510	CD110-22uF-M-16V
C63	a3512	CD110X-47uF-M-16V
C64	a3607	CD110X-22uF-M-50V
C65	a3512	CD110X-47uF-M-16V
C66	a2056	CS1-06B-104Z-63V-Y5V
C67	a2056	CS1-06B-104Z-63V-Y5V
C68	a2056	CS1-06B-104Z-63V-Y5V
C81	a3306	CT4D-2F4-0.22uF-63V-S
C82	a3306	CT4D-2F4-0.22uF-63V-S
C83	a3306	CT4D-2F4-0.22uF-63V-S
C84	a3306	CT4D-2F4-0.22uF-63V-S
C85	a3306	CT4D-2F4-0.22uF-63V-S
C86	a3306	CT4D-2F4-0.22uF-63V-S
C101	a3613	CD110X-100uF-M-25V
C102	a3576	CD110-2.2uF-M-50V
C103	a3516	CD110X-470uF-M-16V
C104	a3509	CD110-10uF-M-16V
C105	a3510	CD110-22uF-M-16V
C106	a3510	CD110-22uF-M-16V
TRANSISTOR		
VD101	a5001	1N4002
VD102	a5001	1N4002
VD103	a1126	HZ6C1
VD104	a5001	1N4002
VD61	a5001	1N4002
V101	a5022	2N5551
V102	a5022	2N5551
V103	a5023	2N5401
V104	a5022	2N5551
V105	a5022	2N5551
V106	a5022	2N5551
OTHER		
L1	a6997	5.5uH
L2	a6997	5.5uH
L3	a6997	5.5uH
L4	a6997	5.5uH
L5	a6997	5.5uH

REF No.	PART No.	PART NAME
L6	a6997	5.5uH
L7	a6879	100uH
S1	a7346	12V RELAY FTR-F4AK012T
S2	a7346	12V RELAY FTR-F4AK012T
S3	a7346	12V RELAY FTR-F4AK012T
N1	P90263	STK402-920
N2	a4390	TDA7294
XS1	a6953	ST-12L PLUG
XS2	a6556	12 PINS SOCKET
XS3	a6514	9 PINS SOCKET